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AUTHOR Kandelman, Harriet A.
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ABSTRACT

Concerned with providing managerial assessment centers with oral communication criteria against which communication apprehension may be measured, the convergent validity of the Personal Report of Communication Apprehension--Organization Form (PRCA-OF) was tested against 23 raters' scores in five one-day developmental assessment centers. The PRCA-OF is a 20-item, 5-point, Likert-type, self-report questionnaire. The scale scores range from a minimum of 20 to a maximum of 100. Four sets of scores were obtained: rater, peer, self, and supervisor. The assessment center exercises included a decision game, dyadic interview, and in-basket simulation. Multiple regression equations were used, with communication scores as the dependent variable, to analyze the relationship between the PRCA-OF scores and the other assessment center scores. Convergent validity was found for the PRCA-OF in both the rater and self categories. It was concluded that a valid measure of communication apprehension, specifically the PRCA-OF, should be included in managerial assessment centers and that training in performance evaluation should be mandatory. (HOD)

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Convergent Validity and Work Applications of Communication Apprehension: An Applied Analysis in an Assessment Center Setting

Harriet A. Kandelman
School of Business Administration
University of Portland
5000 North Willamette Blvd.
Portland, Oregon 97203
(503) 283-7224

Paper submitted to the Instructional/Developmental Communication Division, 35th Annual Conference of the International Communication Association, Honolulu, Hawaii

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Running Head: PRCA-OF VALIDITY

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Convergent Validity and Work Applications of Communication Apprehension: An Applied Analysis in an Assessment Center Setting

Abstract

Convergent validity of the Personal Report of Communication Apprehension--Organization Form (PRCA-OF) (Scott, McCroskey, & Sheahan, 1978) was tested against raters' scores in five one-day developmental assessment centers. The subjects were 23 current first-line supervisors and 34 aspiring first-line supervisors. Four sets of scores were obtained: rater, peer, self, and supervisor. The assessment center exercises included a decision game, dyadic interview, and in-basket simulation. Convergent validity was found for the PRCA-OF in both the rater and self categories.

Multiple regression equations were used, with communication apprehension scores as the dependent variable, to analyze the relationship between the PRCA-OF scores and the other assessment center scores. Both rater and self scores significantly contributed to the equation. The multiple correlations were low to moderate.

It was concluded that a valid measure of communication apprehension, specifically the PRCA-OF, be included in managerial assessment centers. Training personnel in performance evaluation was strongly urged. It was also suggested that employees be involved, via self measures, in the performance appraisal process. The role of peer ratings was suggested as an area of further research, given their consistent, yet unpredictable, nature.

Convergent Validity and Work Applications of Communication Apprehension: An Applied Analysis in an Assessment Center Setting

Strengths and versatilities of the assessment center technique for personnel decisions have been demonstrated (Borman, 1982; Bray, Campbell, & Grant, 1974; Bray & Grant, 1966; Hardesty & Jones, 1968; Kraut & Scott, 1972). As in the multitrait-multirater matrix approach for measuring job performance (Campbell & Fiske, 1959; Lawler, 1967), assessment centers utilize more than one performance criterion (multitrait) and more than one evaluator (multirater). Both of these techniques rely on more than one global rating administered by the employee's immediate supervisor for personnel decisions.

Norton (1977) explains that assessment center design (referring to the dimensions and simulations) and implementation (including the selection and training of raters) are vital for both moral and legal obligations of the organization. However, much of the current research concentrates on raters' judgments in performance situations (Holzbach, 1978; Lyness & Cornelius, 1982; Sackett & Wilson, 1982) rather than the issues of dimension selection construction, or their validity. A large portion of the rater judgment research seeks to analyze phenomena related to measurement biases, such as strictness, leniency, or central tendency errors, and halo and horn effects. Some additional work has examined training effects on raters (Bernardin & Walter, 1977; Borman, 1979; Latham, Wexley, & Pursell, 1975).

As for dimension choice and construction, it has been agreed that since assessment centers differ substantially from objective paper and pencil tests, the dimensions must be both organization- and job-specific (Moses & Byham, 1977; Norton, 1977). Thus, interorganizational measures would be expected to be difficult to obtain, generalizability limited, and resultant studies

sparse.

This paper examines raters' final assessment center scoring of three exercises to test the convergent validity of communication apprehension, which ". . . is defined as an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1977b, p. 78). A communication apprehensive individual tries to avoid oral communication with others, engaging in oral communication as infrequently as possible. For managers, the importance of oral communication has been established (Klemmer & Snyder, 1972; Mintzberg, 1973; Stewart, 1967). In addition, if communication in assessment centers is to be validly measured, an instrument is needed which conjoins with other assessment center measures, is easy to interpret and, above all, valid.

The instrument for measuring communication apprehension, the Personal Report of Communication Apprehension--Organization Form (PRCA-OF) (Scott, McCroskey, & Sheahan, 1978), has ". . . face validity for measuring oral communication apprehension in the organizational setting . . ." (p. 104). It also has internal reliability, concurrent validity with the PRCA (Personal Report of Communication Apprehension), another communication apprehension measure (McCroskey, 1970), and predictive validity in the organizational setting.

The PRCA-OF is a twenty-item, five-point, Likert-type, self-report questionnaire. The scale scores range from a minimum of 20 to a maximum of 100. The higher the score, the higher the apprehension. Raw scores of more than 62 call for concern. Scores higher than 72 indicate a severe problem (Scott et al., 1978). Conceptually, scores one or more standard deviations below the true mean are desirable. The lower the score, the lower the apprehension or fear of oral communication. It would be predicted that

managers score in this low range due to their high dependency on oral communication for initial job placement and subsequent performance success.

The rationale behind the current study is that if the existing measures used in managerial assessment centers have an oral communication dimension which can be measured, then these exercise scores may serve as criteria against which communication apprehension may be measured. Additionally, oral communication is the medium through which exercise performance is transmitted and subsequently rated. Practically, since managers so heavily rely on oral communication, apprehension to communicating orally would be undesirable and would result in low assessment center exercise scores and vice versa. This is dues to the inherent, prevalent nature of oral communication. In the end, a valid measure of communication must be available.

This study focuses on the scores from each rater category: rater, self, peer, supervisor as independent variables and the PRCA-OF score as the dependent variable. Convergent validity was measured and the contribution of each exercise scores to the communication apprehension score was examined. Implications for including a direct measure of communication and for training both raters and supervisors in organizations are made. Finally, the nature of this field study allows for applications of the results to the personnel function in work organizations.

Method

Subjects

The subjects were 57 current (N = 23) and aspiring (N = 34) first-line supervisors participating in five one-day developmental assessment centers (Note 1) sponsored jointly by one county and one city government. The subjects ranged in age from 20 to 57 years (M = 34.7). Twenty-five subjects were male; 29 were female (missing N = 3). Race composition was almost

totally caucasian (47 caucasian; 1 native American Indian; missing N = 9).

Tenure on the subjects' present jobs ranged from less than one year to a maximum of 16 years (M = 3.43). Education breakdown was as follows: high school diploma, N = 5; some college, N = 22; college degree, N = 14; some advanced work, N = 7; advanced degree, N = 3. Thus, a general demographic profile could be generally stated as approximately equivalent numbers of male and female caucasions, in the stable period of early adulthood (Levinson, 1978), averaging 3 years on their jobs, and having some higher education.

The organizations established a pool of 54 raters (male N = 34; female N = 20). One-day training sessions were previously provided to introduce the raters to the assessment center process, exercises (decision game, dyadic interview, in-basket exercise), the 12 dimensions (Note 2), and the rating scale (1 = unsatisfactory; 2 = below average; 3 = satisfactory; 4 = above average; 5 = outstanding).

A total of 12 trained raters whose job ranks were above first-line supervisor, observed and rated subjects in each assessment center. In addition, each subject was rated by his/her immediate supervisor on the same 12 dimensions as used in the assessment centers after the assessment centers were conducted. These ratings were completed independent of the subjects' assessment center performance. That is, supervisors were neither observers nor raters in the assessment centers, nor were they exposed to the training sessions which were conducted for the assessment center raters.

Procedure

Each rater observed two individuals during each exercise. Raters and subjects were systematically rotated to assure each rater would observe each subject only once. The ratio of rater to subject was 1:1. At the conclusion of each assessment center day the two raters negotiated on one final score for

each subject for each exercise. The negotiation process was procedure in the city's previous assessment centers and thus, for continuity for both the raters and the two organizations, was used during these assessment centers.

Along with the independent supervisors' ratings and the trained raters' ratings of subjects, self ratings of subjects, and peer ratings for the decision game and the dyadic interview were obtained. All of the ratings use the same 12 dimensions and 5-point rating scale.

As a final exercise in the assessment centers, subjects completed the self-report Personal Report of Communication Apprehension--Organization Form (PRCA-OF) (Scott et al., 1978). Subjects were assured their responses would not be released to their work organizations and were for the sole purpose of research.

Results

Communication apprehension scores ranged from 26 to 81 (N = 54). Five subjects (9%) scored more than 62 on the PRCA-OF. The mean communication apprehension score was 48 (SD = 10.3). Correlation matrices of ratings scores and interactive and noninteractive categories (Note 3) appear in Tables 1 and 2. The correlation coefficients demonstrates the measures contain several

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Insert Tables 1 and 2 about here

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different aspects; i.e., accounting for the 12 dimensions (Selltiz, Wrightsman, & Cook, 1976). All but two of the significant findings (peer interactive and rater noninteractive shown in Table 2) include the self category as one of the correlation coefficient variables.

Table 1 shows one significant correlation between self and peer final scores. Table 2 shows six significant correlations of the following pairs of

scores: peer interactive and rater interactive; self interactive and rater interactive; self interactive and peer interactive; rater noninteractive and rater interactive, and self noninteractive and both interactive scores of peer and self.

In order to determine the predictive utility of the exercise scores (Note 4) on communication, communication apprehension scores were regressed on the set of predictor variables as shown in Table 3. Rater scores and self scores

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Insert Table 3 about here

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each made a significant contribution ($p < .01$ and $p < .005$, respectively) in the predicted direction (Note 5) to explained variance in communication apprehension scores. Peer scores also contributed significantly ($p < .05$) but not in the predicted inverse direction. Supervisor scores did not enter the equation at a significant level. The multiple correlation ($R = .55$) was highly significant ($p < .005$). The proportion of variance explained by the set of predictor variables was moderate ($R^2 = .30$).

Communication apprehension scores correlated with rater scores ($r = -.41$, $p < .001$) and self scores ($r = -.36$, $p < .005$) at a moderate level in the predicted direction, demonstrating convergent validity. Although communication apprehension scores correlated with peer scores significantly at a moderate level ($r = .44$, $p < .001$) it was not in the predicted direction; the relationship was positive, and validity of the measure can not be determined. The correlation between communication apprehension scores and supervisor scores was not significant. These findings are consistent with the findings of the regression equation.

The exercises were combined to create the two categories of interactive

and noninteractive exercises. With the PRCA-OF being a measure of oral communication, it was hypothesized that PRCA-OF scores could be predicted from the independent variables of rating scores as dichotomized into these two categories. This also allows for a summary analysis more easily interpretable by personnel managers or administrators, a general analysis of the data itself, and a measure of the convergent validity of communication apprehension scores.

Table 4 presents the regression analysis of communication apprehension scores regressed on interactive and noninteractive scores as rated by raters, peers, self, and independent supervisor scores--the last of which were not

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Insert Table 4 about here

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dichotomized into interactive and noninteractive scores. Peer interactive scores were significant ($p < .005$) but, as in the above analyses, not in the predicted inverse direction. None of the other scores entered into the equation at a significant level. The multiple correlation ($R = .51$) was significant ($p < .01$). The proportion of variance explained by the set of independent variables ($R^2 = .26$) was at a moderately low level.

Communication apprehension scores correlated with both rater interactive scores ($r = -.28$) and self noninteractive scores ($r = -.27$) at identical significant levels ($p < .05$). As in the above regression analysis, convergent validity may be concluded for the rater and self categories. The correlation between communication apprehension scores and both self interactive scores and rater noninteractive scores was not significant. Peer interactive scores and supervisor scores did not correlate with communication apprehension scores at a significant level (nor in the predicted direction).

Discussion and Implications

This study tested the convergent validity of the Personal Report of Communication Apprehension--Organization Form (PRCA-OF) (Scott et al., 1978) in light of its use in managerial assessment centers. Several findings emerged. First, communication apprehension was found to be significantly inversely correlated with rater and self scores, showing convergent validity of the PRCA-OF. Similar findings were evident for the interactive and noninteractive types of tests; rater interactive scores and self noninteractive scores significantly negatively correlated with communication apprehension scores.

Peer scores (excluding peer interactive scores) significantly contributed to and correlated with communication apprehension scores (with the exception of peer interactive scores, in the correlational analysis) but not in the direction which was hypothesized. This finding is contrary to McCroskey and Richmond (1976), but conceptually consistent with Kraut (1975) who found peer ratings to be a mobility predictor while rater ratings were found to be a concurrent measure of employee performance. Roadman (1964) concurs with the mobility concept, explaining the importance of peer prediction to industry. In the present study, peer scores consistently defied the predicted inverse relationship. This finding supports the use of peer scores for uses other than those in this study, and the convergent validity measure of the PRCA-OF must be further tested.

As for prediction, self scores emerged as the strongest predictor of communication apprehension scores, and rater scores as second in their contribution. Peer scores significantly contributed to the equation but again, not in the predicted direction. In the interactive and noninteractive categories, none of the independent variables predicted communication

apprehension scores as hypothesized. However, the combined effect of the independent variables (each multiple correlation) in both regression equations were moderate, with their respective variances explaining a reasonable proportion of the dependent measure of communication apprehension.

The final rating scores were statistically more significant (R = .55; p < .005) than the interactive and noninteractive scores (R = .55; p < .01) (Winch & Campbell, 1969) but the contribution of each set of independent variables was identical. The utility of the combined effect of each set of independent variables shows the importance of multiraters and multitraits as they are combined for use in assessment centers. It also demonstrates the predictive nature of some of the final rating scores but not these scores as combined into interactive and noninteractive categories.

The number of high communication apprehensives in this sample is roughly equivalent to the number found in a similar assessment center setting (Kandelman, 1980) and approximations of other settings (McCroskey, 1977a). From these results, the PRCA-OF may be suggested, with caution as this point of the research, for use as an additional interactive measure in assessment centers. For the time being, analyses should be restricted to the rater and self categories.

The importance of measuring communication is obvious. This research has shown that communication apprehension can be predicted from final rating scores. The measure of communication apprehension (PRCA-OF) is a valid one. However, the measure of communication apprehension as predicted from interactive and noninteractive rater and self scores is virtually nonexistent. The results suggest the validity of the measure of communication apprehension as measured against the judgments of the rater and self scores.

The major implications of this study are clear. First, a valid measure

of communication should be included when evaluating managerial level employees. The significant bivariate correlations of this study demonstrate the convergent validity of the measure of the PRCA-OF for measuring oral communication in assessment centers. This measure has been suggested, however, with caution. Other similar measures are available (Daly, 1978) and may be used in both the assessment center setting and in conjunction with traditional performance evaluations.

Second, training in performance evaluation is mandatory. Research on evaluator training is shown to minimize rating errors (Bernardin & Walter, 1977; Borman, 1979; Holzbach, 1978; Latham et al., 1975). The training offered the raters of this study focused on observation of behaviors and exercise scoring on the 12 dimensions. No training of interactive or noninteractive category distinction was given. These latter categories yielded no predictive power, barring the peer score which predicted in the wrong direction. As for the independent supervisor ratings, they neither explained nor correlated with the communication apprehension measure, where the trained rater ratings do just that. In this study, supervisors did not receive the standardized training given to the assessment center raters. Neither of the organizations otherwise offered performance training to its supervisors.

A third implication is to involve the employee, via self measures, in his/her performance appraisal (Holzbach, 1978). It is a difficult step for many managers (Patz, 1975). However, as evidenced from this study, including employees in the appraisal of their job performance adds valuable information to it. Employees hold the most information about their abilities as well as lack of them; particularly the skill of oral communication.

Finally, the role of peer ratings in performance evaluations must be

further examined. Although the demographic profile of the subjects used in this study is narrow and the work organizations is that of government, the results of this work taken with others as previously cited, point to the peculiar role of peer ratings. As Mumford (1983) states, ". . . the validity of peer evaluations represents something of an enigma" (p. 867). It is necessary to discover whether peer ratings are solely reliable as mobility measures or if additional uses may be made of them. This research is called for.

In addition, the categorization of interactive and noninteractive and their measurement should be developed further especially when measuring both oral and written communication skills. Although this dichotomy is simple both conceptually and practically for measurement in work organizations, it may result in categories too broad to yield the necessary sensitive measurements. Nevertheless, where oral communication is vital to the supervisory function, written communication is no less important. First, an awareness of and subsequently a measure of, the interactive and noninteractive categories may be helpful in determining what behaviors to observe and which skills to test for any given managerial level job.

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Footnotes

[1]The purpose of a developmental assessment center is to evaluate candidates' job-related strengths and weaknesses for training and/or development. In this study, current first-line supervisor held the rank of first line supervisors in the organization. Aspiring first-line supervisors were those whose next promotion would be to the rank of first-line supervisor.

[2]The twelve dimensions were: communication skills, judgment, decisiveness and assertiveness, problem solving and decision making, impartiality, recognition of others' contributions, interest and sensitivity to others, interest in work, concern with others' work, creativity, planning and organizing of own work, planning and organizing work for others.

[3]Interactive exercises is defined as those exercises which required subjects' engaging in oral communication as a means to complete the exercises. The interactive exercises were the decision game and the dyadic interview. The noninteractive exercise category, conversely, did not require subjects to orally communicate. It included the in-basket exercise. These two categories were created to align with the organizations' rating categories of oral communication skills and written communication skills.

[4]The exercises included decision game, dyadic interview, and in-basket simulation.

[5]Since the scoring goal is an increase in exercise scores and a decrease in communication apprehension scores (and vice versa), an inverse relationship is predicted.

Table 1

Correlation Matrix of Final Rating Scores

(N = 57)

	Peer	Self	Supervisor
Rater	.17	.18	-.00
Peer		.44*	.02
Self			-.04

*p < .001, two-tailed

Table 2

Correlation Matrix of Interactive, Noninteractive, and Supervisor Scores

N = 57

	Peer Interactive	Self Interactive	Rater Noninteractive	Self Noninteractive	Supervisor
Rater Interactive	.45**	.52**	.27*	.19	-.02
Peer Interactive		.63**	-.04	.29*	-.03
Self Interactive			.03	.48**	-.03
Rater Noninteractive				.23	-.09
Self Noninteractive					.11

Note: All significance levels are two-tailed

*$p < .05$

**$p < .001$

Table 3

Correlation and Regression of Communication Apprehension Scores and Final Rating Scores (N = 54)

	Communication Apprehension		
Independent Variable	Partial Beta	F-Ratio	r
Rater Scores	-.344	7.69**	-.41****
Peer Scores	.301	4.88*	.44****
Self Scores	-.418	8.83***	-.36***
Supervisor Scores	.089	.55	.04
	R = .55; df = 4,49;		
	F = 5.39; p < .005		

Note. All significance levels are one-tailed.

*p < .05

**p < .01

***p < .005

****p < .001

Table 4

Correlation and Regression of Communication Apprehension Scores and Interactive and Noninteractive Scores (N = 54)

	Communication Apprehension		
Independent Variable	Beta	Partial F-Ratio	r
Rater Interactive Scores	- .289	3.07	- .28*
Peer Interactive Scores	.50	8.40**	.11
Self Interactive Scores	- .249	1.61	- .20
Rater Noninteractive Scores	.000	0.00	- .18
Self Noninteractive Scores	- .252	2.92	- .27*
Supervisor Scores	.09	.51	.03
	R = .51; df = 6,47;		
	F = 2.73; p < .01		

Note. All significance levels are one-tailed.

*p < .05

**p < .005